

Remarks

Applicants have reviewed this Application in light of the Office Action mailed June 5, 2006. Applicants have amended the title and various portions of the specification. Applicants have also amended Claims 1-21, 23-24, and 27. Applicants respectfully request reconsideration and allowance of all pending claims.

The Title is Descriptive

The Examiner requires a new title. To expedite issuance of a patent from this Application, Applicants have amended the title to be more descriptive.

**Applicants Have Amended the Specification to Capitalize
HYPERTRANSPORT and INFINIBAND**

The Examiner states, "The use of the trademark HYPERTRANSPORTTM and INFINIBAND[®] has been noted in this application. It should be capitalized wherever it appears." To expedite issuance of a patent from this Application, Applicants have amended the specification to capitalize HYPERTRANSPORT and INFINIBAND.

Dependent Claims 19-20 are Definite

The Examiner objects to dependent Claims 19-20 because, according to the Examiner, dependent "Claims 19-20 refer to an X, Y, and Z axis. There is no indication of the relationship of each axis relative to the other, thus rendering the claims indefinite." To expedite issuance of a patent from this Application, Applicants have made clarifying amendments to Claim 19. Applicants respectfully request withdrawal of the objection to dependent Claims 19-20.

Independent Claims 1, 9, and 21 are Definite

The Examiner rejects independent Claims 1, 9, and 21 under 35 U.S.C. § 112 para. 2 because independent Claims 1, 9, and 21 recite *eight or more ports*. According to the Examiner, “this limitation allows for an infinite number of ports and thus renders the claim indefinite.” Applicants respectfully disagree with the Examiner.

The M.P.E.P. states, “Breadth of a claim is not to be equated with indefiniteness.” M.P.E.P. ch. 2173.04 (Rev. 3, August 2005). Moreover, “[i]f the scope of the subject matter embraced by the claims is clear, and if applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, then the claims comply with 35 U.S.C. 112, second paragraph.” *Id.* Furthermore, the “primary purpose of this requirement of definiteness of claim language is to ensure that the scope of the claims is clear so the public is informed of the boundaries of what constitutes infringement of the patent.” M.P.E.P. ch. 2713 (Rev. 3, August 2005). “The requirement to ‘distinctly’ claim means that the claim must have a meaning discernible to one of ordinary skill in the art when construed according to correct principles. Only when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction must a court declare it indefinite.” M.P.E.P. ch. 2173.02 (Rev. 3, August 2005) (quoting *Metabolite Lab., Inc. v. Laboratory Corp.*, 370 F.3d 1354 (Fed. Cir. 2004) (citations omitted)).

Whether or not *eight or more ports*, as recited in independent Claims 1, 9, and 21, “allows for an infinite number of ports,” *eight or more ports*, as recited in independent Claims 1, 9, and 21, clearly sets out the boundaries of what constitutes infringement. For at least this reason, *eight or more ports*, as recited in independent Claims 1, 9, and 21, is definite under 35 U.S.C. § 112 para. 2.

The Examiner also rejects independent Claims 1, 9, and 21 under 35 U.S.C. § 112 para. 2 because independent Claims 1, 9, and 21 recite *High Performance Computing*, which according to the Examiner “renders the claims indefinite as what is considered high performance at one point in time may be substantially different . . . at another point, thus

changing the scope of the claim.” To expedite issuance of a patent from this Application, Applicants have amended Claims 1-21 not to recite *High Performance Computing*.

Applicants respectfully request reconsideration and allowance of independent Claims 1, 9, and 21 and all their dependent claims.

Dependent Claims 3-4, 7, 11-12, 15, 23-24, and 27 are Definite

The Examiner rejects dependent Claims 3-4, 11-12, and 23-24 under 35 U.S.C. § 112 because dependent Claims 3-4, 11-12, and 23-24 recite *HYPERTRANSPORT*. The Examiner similarly rejects dependent Claims 7, 15, and 27 under 35 U.S.C. § 112 because dependent Claims 7, 15, and 27 recite *INFINIBAND*. To expedite issuance of a patent from this Application, Applicants have amended dependent Claims 3-4, 7, 11-12, 15, 23-24, and 27 not to recite *HYPERTRANSPORT* or *INFINIBAND*. Applicants respectfully request reconsideration and allowance of dependent Claims 3-4, 7, 11-12, 15, 23-24, and 27.

Independent Claims 1, 9, and 21 are Allowable Over *Osten*

The Examiner rejects independent Claims 1, 9, and 21 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,735,660 issued to Osten and Still (“*Osten*”).

Osten merely discloses an apparatus that includes a processor/memory complex. (Figure 1; Column 4, Lines 56-59). The processor/memory complex includes one or more central processing units (CPUs) coupled to a memory controller, and the memory controller provides access to a system memory and an input/output (I/O) subsystem. (Figure 1; Column 4, Lines 59-62). The I/O subsystem provides external input and output functionality for the processor memory complex. (Figure 1; Column 4, Lines 59-62). The I/O subsystem includes a host channel adapter (HCA) that interfaces the memory controller with a switch that in turn couples the I/O subsystem to multiple target channel adapters (TCAs) through a backplane. (Figure 1; Column 4, Line 63, through Column 5, Line 4). The backplane includes multiple slots capable of receiving and communicating with the TCAs. (Figure 1; Column 5, Lines 4-

8). A TCA includes a circuit board substrate incorporating multiple contacts for coupling the TCA to a backplane slot connector defined in a slot on the backplane. (Figures 2 and 4; Column 4, Lines 32-37; Column 9, Lines 58-62).

In contrast, independent Claim 1 of this Application, as amended, recites:

A node comprising:
a motherboard;
a switch comprising eight or more ports, the switch integrated on the motherboard; and
at least two processors, each processor communicably coupled to the integrated switch and integrated on the motherboard.

Independent Claims 9 and 21 recite limitations that are substantially similar to limitations recited in independent Claim 1.

To reject independent Claim 1, the Examiner asserts that the CPUs and the switch in *Osten* are all “utilized on one motherboard” and all “reside on the same board.” Applicants respectfully disagree with the Examiner. *Osten* merely discloses one or more CPUs connected to a switch via a host interconnect, a memory controller, and an HCA. Nowhere does *Osten* describe or illustrate the CPUs, the switch, and the devices connecting them to each other as being “utilized on one motherboard” or “resid[ing] on the same board.” Instead, *Osten* teaches away from any such arrangement. In *Osten*, the CPUs and the HCA are components of devices that are distinct and separate from each other: a processor/memory complex includes the CPUs and an I/O subsystem includes the HCA. Moreover, the I/O subsystem in *Osten* provides external input and output functionality for the processor/memory complex. The HCA is external to the processor/memory complex. Furthermore, *Osten* describes “motherboards, daughterboards, etc.” as being “other components” relative to the backplane in *Osten*, which appears to include the switch in *Osten*. (Figure 2; Column 5, Lines 8-13; Column 8, Lines 3-21). Therefore, even assuming for the sake of argument that “utilized on one motherboard” or “resid[ing] on the same board” could be properly considered ***integrated on the motherboard***, as recited in independent Claim 1, *Osten* would still fail to disclose, teach, or suggest the CPUs and the switch in *Osten* all being ***integrated on the motherboard***, as recited in independent Claim 1.

The Examiner states, “It is clear that the system in Fig. 1 [of *Osten*] is intended to be utilized on one motherboard. It would be extremely uncommon for one of ordinary skill in the art to implement each unit on a separate board as it would require an incredible amount of area to house.” Applicants respectfully disagree with the Examiner. Contrary to any such intent, *Osten* discloses that the system illustrated in Figure 1 includes more than one board. The TCAs in *Osten* each include a circuit board substrate inserted into a slot on the backplane in *Osten*.

The Examiner further states that, “since the components (12, 22, 24, etc.) are single chips operating together, it would be inherent that they would reside on the same board.” Even assuming for the sake of argument that the CPUs, the HCA, and the switch in *Osten* are “single chips operating together,” the Examiner has failed to properly demonstrate that *Osten* inherently discloses that the CPUs, the HCA, and the switch in *Osten* all “reside on the same board.” According to the M.P.E.P., “[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.” M.P.E.P. ch. 2112(IV) (Rev. 3, Aug. 2005) (emphasis in original) (citing *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993)). Moreover, “[t]o establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *Id.* (quoting *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999)). Furthermore, “[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Id.* (emphasis in original) (quoting *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)). Nowhere does the Examiner “provide a basis in fact and/or technical reasoning” to support the assertion that an arrangement of the CPUs, the HCA, and the switch in *Osten* on the same board “necessarily flows from the teachings of” *Osten*.

“To anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim.” *Brown v. 3M*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987); M.P.E.P. ch. 2131 (Rev. 1, Feb. 2003) (Quoting *Verdegaal Bros.*, 2 U.S.P.Q.2d at 1053). Moreover, “the identical invention must be shown in as complete detail as is contained . . . in the claim.” *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989); M.P.E.P. ch. 2131 (Rev. 1, Feb. 2003) (Quoting *Richardson*, 9 U.S.P.Q.2d at 1920). Furthermore, “[t]he elements must be arranged as required by the claim.” *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990); M.P.E.P. ch. 2131 (Rev. 1, Feb. 2003) (Quoting *In Re Bond*, 15 U.S.P.Q.2d at 1566). As shown above, *Osten* fails to disclose, either expressly or inherently, each and every limitation recited in independent Claim 1. Therefore, *Osten* does not anticipate independent Claim 1 under governing Federal Circuit case law and the M.P.E.P.

For at least the reasons above, Applicants respectfully request reconsideration and allowance of independent Claims 1, 9, and 21 and all their dependent claims.

Conclusion

For at least the foregoing reasons, Applicants respectfully request allowance of all pending claims.

If a telephone conference would advance prosecution of the Application, the Examiner may call Travis W. Thomas, Attorney for Applicant, at 214.953.6676.

The Commissioner may charge a \$1,020.00 for a three-month extension of time to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P. The Commissioner may charge any fee and credit any overpayment to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,
BAKER BOTTS L.L.P.
Attorneys for Applicants

A stylized handwritten signature consisting of two 'T' characters connected by a horizontal line, with a short horizontal stroke at the end.

Travis W. Thomas
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Date: December 5, 2006

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